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2021-05-19

# Understanding PALT Time Frames with Big Data Analytics

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# Understanding PALT Timeframes with Big Data Analytics

David Gill, Department of the Treasury  
Internal Revenue Service

Acquisition Research Symposium  
Tuesday, 11 May 2021 - 9:15 am - 10:30 am PT

# NDAA Mandate to Measure Contract Award Timeframes

- Section 878 of the National Defense Authorization Act (NDAA) for FY 2019 required the Administrator of the Office of Federal Procurement Policy (OFPP) to develop and establish a standard definition the term develop a plan for measuring and publicly reporting data on PALT for Federal Government contracts.
- As a result of Section 878 and associated regulations Procurement Administrative Lead Time (PALT) has been defined as “the time between the date on which an initial solicitation ... is issued ... and the date of the award of the contract”.
- Contract PALT timeframes are now being collected in a standardized government-wide format due to the addition of solicitation date reporting to the Federal Procurement Data System (FPDS).

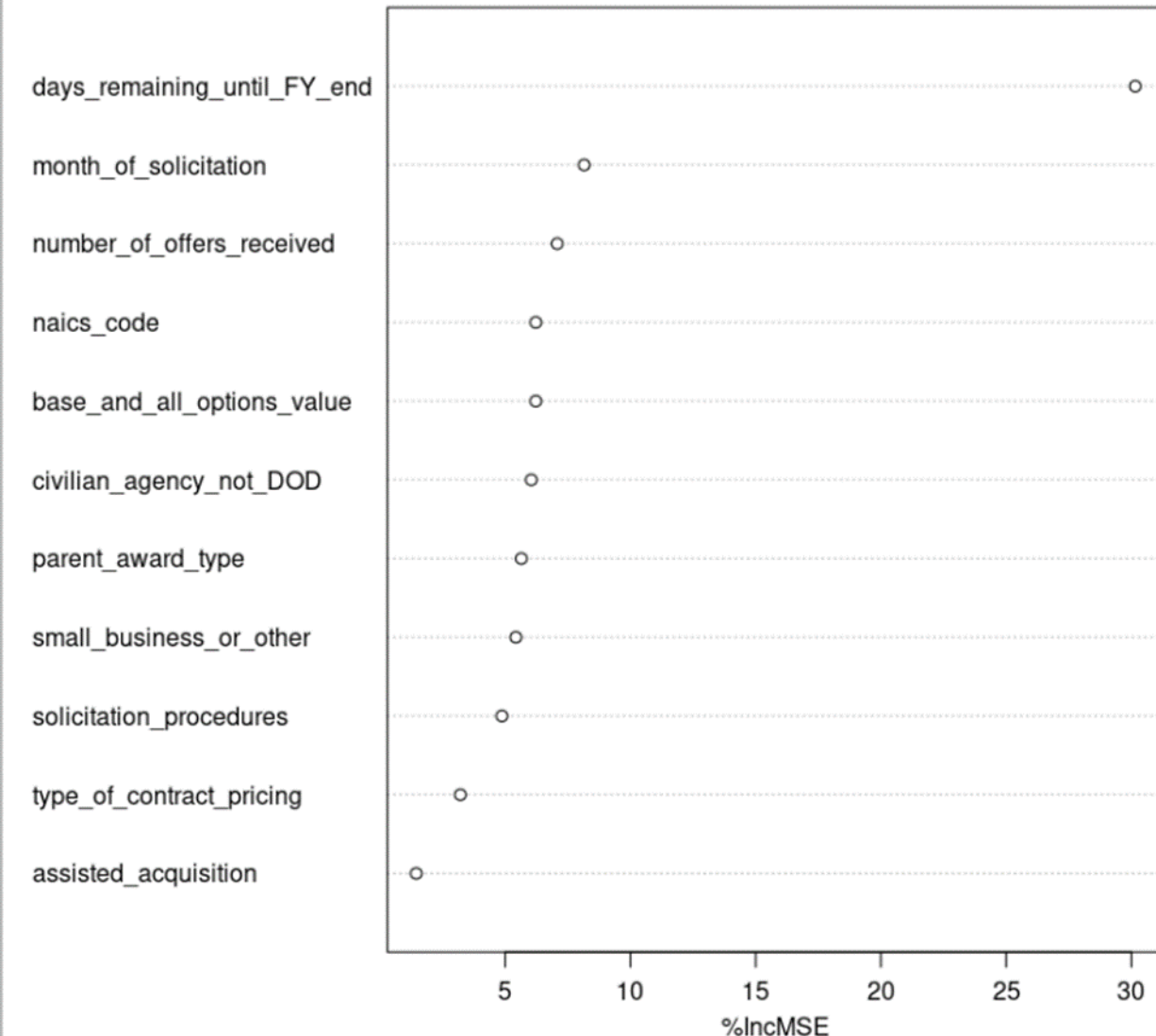
# New, Very Large Dataset on PALT Timeframes

- This analysis supports the Cross-Agency Priority Goal of Frictionless Acquisition. The intent of this goal is to procure commercial items at the same speed as the private marketplace & break down barriers to entry using modern business practices and technologies.
- FPDS PALT timeframes have been entered for over 5 million contracts. Machine learning and data visualization techniques were used to better understand factors influencing time to contract award. The research paper explains the key factors impacting PALT, identifies opportunities to increase efficiency and reduce PALT, and uses a data-driven approach to generate milestone schedule estimates informing customers when their contract is likely to be awarded.

# Key Findings – What Drives PALT Timeframes?

- This study confirms findings from prior PALT research and also provides a more comprehensive, government-wide explanation of factors driving time to contract award. Confirmed factors affecting PALT include:
  - Dollar value, number of offers received (i.e., extent of competition), the goods or services procured (i.e., NAICS code), and type of contract. A number of new insights into PALT have been quantified using a large dataset.
  - The choice of solicitation procedures by the Contracting Officer impacts time to contract award.
  - Use of small business concerns and assisted acquisition is associated with reduced PALT timeframes.
  - Further, the number of days remaining until the fiscal year end is a powerful driver of contract award dates. The contracting personnel's 'workload also affects PALT, as does the organization to which they support.
  - Finally, certain words and word-combinations in the award description field are related to PALT. A better understanding of these factors should help acquisition teams to reduce PALT and help acquisition leaders to set policies and processes to mitigate PALT.

# Understanding PALT with Machine Learning



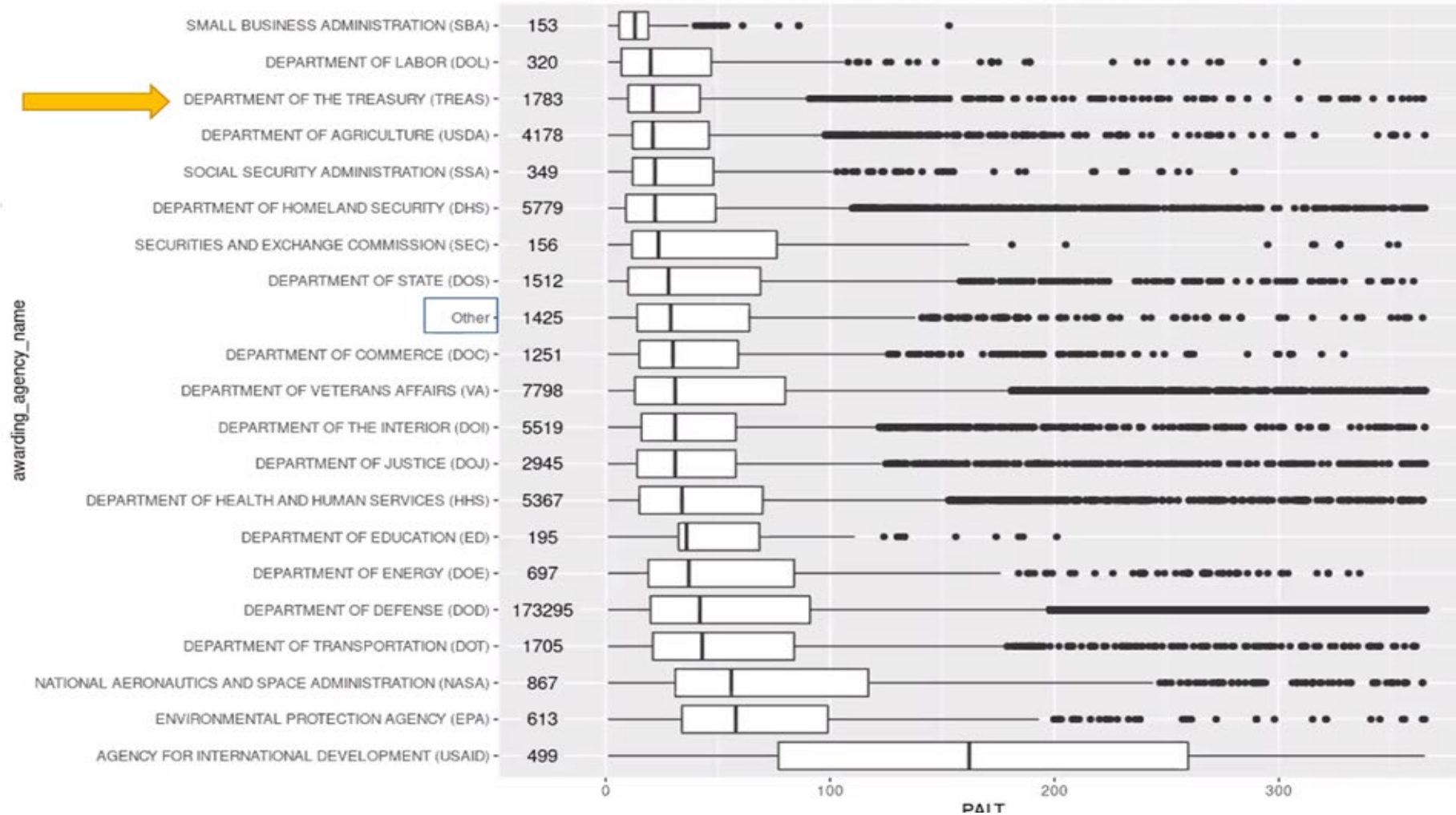
Trained a random forest machine learning model to identify some key drivers of time to contract award. The model is based on a forest of data-driven decision trees.

Time drivers are statistically ranked in descending order of importance. Days until fiscal year end has the strongest effect on PALT days.

# PALT Timeframes by Agency (FY 2020)

USA Spending FY 2020 Boxplot - PALT Timeframe by Awarding Agency

Date Notes: PALT filtered between 1 and 365 days. Agencies with less than 150 records grouped as 'Other'. Excludes C



Box plot displays median PALT timeframes (solicitation to award) with a vertical line (|). Rectangular boxes show upper and lower quartiles (25<sup>th</sup> and 75<sup>th</sup> percentile timeframes).

Most acquisitions are executed promptly with PALT timeframes lasting a few months. Outliers (longer PALT timeframes) are displayed as black dots on the right.

# Statistically Predicting When Shopping Carts (aka Requisitions) Will Be Awarded on Contract

http://10.207.92.30:8787/p/6e108ece/ Open in Browser Publish

**PALT Prediction**

Report Prediction  
Custom Prediction  
Data Statistics  
Model Info

**PALT Report**  
Model Data

**Table**  
Model Data

Select row to import into custom prediction:  
1  
Submit

Show 10 entries

	SC.Number	PALT.prediction	Obligated	Fund	Fund.Expiration	Funding.BU	Functional.Area	CS	CS.Division	CS.Office	CS.Branch	CS.Sect
1	5000102947	4.084	620	20200913D	20	Small Business/Self Employed (SBSE)	7C	Warshaw Ezilda	Off of Business Solutions Acq	Procurement	Operations Branch Northern Reg	Western Section
2	5000103074	5.868	680	20200913D	20	Small Business/Self Employed (SBSE)	7C	Warshaw Ezilda	Off of Business Solutions Acq	Procurement	Operations Branch Northern Reg	Western Section
3	5000087350	6.316	6750	20200913D	20	Large Business & International (LB&I)	7A	Wingrove Lori J	Off of Business Solutions Acq	Procurement	Operations Branch Southern Reg	Midstates Section
4	5000090077	18.945	12900	20200912D	20	Wage & Investment (W&I)	2B	Vitenko Diana	Off of Business Solutions Acq	Procurement	Operations Branch Northern Reg	Western Section
5	5000090141	2.813	310	20200912D	20	Wage & Investment (W&I)	2C	Reid Stacey	Off of Business Solutions Acq	Procurement	Operations Branch Northern Reg	Western Section

**Predicted PALT (time to award) is expressed in days.**

**The IRS can auto-generate ballpark predicted award dates for each contract action using report data on in-process acquisitions.**

Evaluation Metric	Value
Percent within +/- 30 days	86.75%
Percent within same month	61.62%
Percent within +/- 7 days	44.32%
Percent within same week	24.19%